RECOGNITION

October 1999

Ceramics WebBook Highlighted by NSTC

The NIST Ceramics WebBook was highlighted in the National Science and Technology Council's report: "Information Technology Frontiers for a New Millennium." This report was prepared by the Committee on Technology's Subcommittee on Computing, Information and Communications R&D as a supplement to the president's FY 2000 budget. The WebBook, which provides scientists and engineers with Internet access to an extensive, authoritative information database on ceramic materials, was used as an example of a "human centered system." The WebBook was developed as part of the NIST SIMA program and provides numeric data as well as information useful for the interpretation of the behavior of ceramics.

November 1999

Senior Undergraduate Award to CSTL summer SURF student Wilma Febo

Wilma Febo, a 1999 CSTL summer SURF student from the University of Puerto Rico at Cayey, was awarded first place in an undergraduate poster competition for her work on “Synthesis of Novel Amphiphilic Glycerol Ethers and Esters.” This work was carried out under the direction of David Vanderah of CSTL’s Biotechnology Division. As part of her award, Febo will present her work at the Nov. 10-14, 1999, Minority Biomedical Research Support (MBRS) Meeting at the Marriott Convention Center in Phoenix, Ariz. This is the second year in a row where Febo has won first place in a poster competition. Last year she was awarded best poster at the Dec. 2-6, 1998, Materials Research Society (MRS) Meeting in Boston, Mass., for her work in ceramic phase-equilibria as a 1998 SURF student in MSEL. Febo is a senior chemistry major who is graduating in May 2000 and is planning to continue her education after graduation by pursuing a Ph.D. in chemistry/materials science.

January 2000

OOF Named Technology of the Year

Industry Week magazine has named NIST as one of its 1999 Technology of the Year award winners for the development of OOF. OOF is an object-oriented finite-element system for the modeling of real material microstructures, which was created by Steve Langer, ITL (Mathematical and Computational Sciences Division), Andy Roosen, MSEL (Ceramic Division), Ed Fuller, MSEL (Ceramics Division), and Craig Carter, MIT (formerly of MSEL). The announcement of Industry Week’s 7th annual Technology and Innovation Awards appears in its Dec. 6, 1999, issue.

Each December Industry Week profiles promising new technologies to "celebrate the link between technological creativity and economic progress," naming some 25 innovations as Technologies of the Year. Winners represent a wide range of technologies from both industry and national laboratories. This year's winners, which were dominated by information technologies, included Gigibit Ethernet Transceiver Chip (Broadcom Corp.), Roentgen High-Resolution Flat-Panel Display (IBM), AllWave Single-Mode Optical Fiber (Lucent), Super-Iron Battery (The Technion), and Pirius Hybrid Gas/Electric Vehicle (Toyota). Past winners have included Ultralight Steel Auto Body (American Iron and Steel Institute, 1998), Double-density flash memory (Intel, 1997), and Java (Sun, 1995). Winners are listed at http://www.industryweek.com/Tech&Innovation/.

OOF is designed to help materials scientists calculate macroscopic properties from images of real or simulated microstructures. It is composed of two cooperating parts: ppm2oof and oof. ppm2oof reads images in the ppm (Portable Pixel Map) format and assigns material properties to features in the image. oof conducts virtual experiments on the data structures created by ppm2oof to determine the macroscopic properties of the microstructure. Currently, the programs calculate stresses and strains, but work is under way to add thermal field calculations in a joint venture with General Electric, sponsored by the Department of Energy.

In its description of OOF, Industry Week says, "The OOF advantage to corporate R&D could be significant. Because OOF replaces weeks of laboratory experiments with quick computational assays, it can help researchers run their labs more strategically." For more information about OOF, see http://www.ctcms.nist.gov/oof/.

April 2000

Davis Medal Award

Tim Quinn and Chris McCowan (together with co-authors from Tower Automotive and Arc Logic) have received the A.F. Davis Silver Medal Award for their paper "Arc Sensing for Defects in Constant-Voltage Gas Metal Arc Welding." This medal is awarded annually to the best paper published in the Welding Journal on the topic of machine design. They received the award at the Spring 2000 Annual Meeting of the American Welding Society.

Tim Quinn and Chris McCowan are members of the NIST team that works on welding issues in materials processing in MSEL's Materials Reliability Division.

June 2000

National Medal of Technology

Stanley J. Dapkunas, deputy chief of MSEL's Ceramics Division, managed the 1999 National Medal of Technology (NMT) award events for the Technology Administration. The NMT is the highest award given by the U.S. government to recognize American

innovators whose technical accomplishments have made a profound and lasting contribution to our economy and quality of life. The NMT was presented by President Clinton in the White House on March 14, 2000, to four individuals and one company whose accomplishments were instrumental in bringing the Internet, bar code recognition, and recombinant DNA to widespread public use. The NMT program is managed by the Office of the Under Secretary of Commerce for Technology.

NIST Work Featured in C&E News

Polymers Division work on combinatorial methods in materials science was featured in a special report titled "Materials A la Combi" in the May 15, 2000, issue of C&E News. The article reports growing interest among researchers in industry, government, and universities in the application of combinatorial methods to discovery of new materials and their properties. A description of the Polymers Division effort was reported in the May 2000 NIST Monthly Highlights. R.B. van Dover, a physicist at Lucent Technologies' Bell Laboratories, cited the NIST work in the C&E News article as noteworthy for its investigation of materials properties as functions of both composition and processing variables.

August 2000

National Research Council Report on the Helium Reserve

Tom Siewert of MSEL's Materials Reliability Division served on a National Research Council committee that reviewed the conditions for sale of the U.S. Federal Helium Reserve. This sale was mandated by the Helium Privatization Act of 1996 (P.L. 104-273), which ordered the Department of the Interior to begin liquidating the U.S. Federal Helium Reserve by 2005 in a manner consistent with "minimum market disruption." The act mandated a review of the impact by the National Academy of Sciences. The committee spent a year in studying the issue and held two national workshops that assessed the economic and technical impacts on both the producers and users. The final report of the committee, "The Impact of Selling the Federal Helium Reserve," has just been published by the National Academy Press. The report concludes that the price of helium is likely to remain stable until at least 2010, at which time greater sales from the reserve will serve to stabilize the price and availability. The report included a number of recommendations, such as regular monitoring of the supply-demand situation at 5 to 10 year intervals. Siewert's helium expertise comes from his current involvement with the welding industry, one of the greatest users of helium, as well as from earlier liquid-helium-based research conducted at the NIST Boulder Laboratories for many years.

Maria Goeppert-Mayer Distinguished Scholar Award

Gabrielle Long has been named recipient of the Maria Goeppert-Mayer Distinguished Scholar Award for 2000. The position of Maria Goeppert-Mayer Distinguished Scholar was established by Argonne National Laboratory to recognize outstanding achievement by a woman scientist or engineer and to provide opportunities for her to conduct

innovative research utilizing the special environment and capabilities offered by Argonne. As part of this award, beginning in October, Long will be spending a large portion of her time conducting research at the Advanced Photon Source at Argonne.

November 2000

MSEL Metallurgist Elected Fellow of the American Physical Society

Sam Coriell, who retired at the beginning of November 2000, after 38 years at NIST, has for a long time been a national leader in the theoretical analysis of crystal growth and solidification processes. Working with numerous collaborators, Sam studied the factors, including fluid flow, which determine the shape and stability of shape in growing crystals. He was recently elected to fellowship in the American Physical Society. The citation was "For Fundamental contributions to the theory of the interaction between hydrodynamics and morphological instabilities during solidification." The announcement will be published in the March 2001 issue of APS News.

NCNR Director Becomes AAAS Fellow

J. Michael Rowe, director of the NIST Center for Neutron Research, has been elected a Fellow of the American Association for the Advancement of Science. Each year since 1874, the Council of the AAAS elects members whose efforts on behalf of the advancement of science or its applications are scientifically or socially distinguished. Rowe is being honored for outstanding leadership of the nation's premier neutron facility for research in physics, chemistry, materials, and biology. Rowe will be formally inducted in San Francisco on Feb. 17, 2001, during the AAAS Fellows Forum, a part of the Association's annual meeting.

January 2001

Wong-Ng Elected a Fellow of the International Centre for Diffraction Data

Winnie Wong-Ng, a staff scientist in the Ceramics Division of MSEL, was recently elected as a Fellow of the International Centre for Diffraction Data. Wong-Ng was honored based upon her long-term, significant contributions to the X-ray powder diffraction data files. Wong-Ng has an international reputation in the field of X-ray diffraction and phase equilibria. She is currently involved in the determination of complex phase diagrams pertinent to high Tc superconducting materials.

Vigliotti Receives Award of Appreciation

Dan Vigliotti of MSEL's Materials Reliability Division has received an Award of Appreciation from Committee E28 (Mechanical Testing) of the American Society for Testing and Materials. This award was given for outstanding service and participation in the development for standards for impact testing within ASTM. He also serves as the chairman of ASTM Task Group E28.07.02 on Oversight of Standard E 23, the Standard

Test Method for Notched Bar Impact Testing of Metallic Materials. Notched bar impact testing uses a swinging hammer to assess the resistance of a material to brittle fracture. The low cost and simple configuration of the test have made it a common requirement in codes for critical structures such as pressure vessels and bridges. NIST provides standard reference materials (SRMs) to machine owners and to independent calibration services, then evaluates the results of tests of these specimens on their impact machines. Using the test results, Dan Vigliotti, as coordinator of the NIST Charpy Impact Verification Program, works with the machine owners to bring their machines into compliance with ASTM Standard E 23. This activity requires interaction with over 1000 customers each year.